

PATENT

Serial No. 09/787,339

Amendment in Reply to Advisory Action mailed on April 12, 2005

IN THE SPECIFICATION

Please amend the specification as follows:

Delete the paragraph spanning pages 1-2, between page 1, line 28, and page 2, line 2 of the specification.

Replace the paragraph on page 8, between lines 2-18 of the specification with the following:

Figure 3 shows another embodiment of the first and second writing means in the recording apparatus of figure 1. A channel modulation unit 302 receives the composite signal supplied to its input and processes the composite signal to obtain a sequence of m -bit channel words. Preferably the channel modulation unit comprises an $n - m$ channel modulator. A generator unit 304 receives the remaining portion supplied to its input and generates p merging bits in response to said remaining portion. An unit 306 receives the sequence of m -bit channel words and p merging bits and inserts the p merging bits between adjacent m -bit channel word to obtain a signal to be written on the record carrier 32. The p merging bits

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are normally used to prevent (d,k) constraint violations between adjacent channel words and for the additional task of DC control. A method for generating p merging bits carrying an additional signal and preventing for (d,k) constraints violations between adjacent channel words is described in the non pre-published patent application EP 99202061.0 (PHN 17.520). The data capacity for the additional signal thus obtained, is used to carry the remaining portion. The first writing unit 28 in the apparatus of figure 1 comprises the units with reference number 302 and 306. The second writing unit 34 in the apparatus of figure 1 comprises the units with reference number 302-304 and 306.

Replace the paragraph spanning pages 8-9, between page 8, line 32, and page 9, line 11 of the specification with the following:

Figure 5 shows a second embodiment of the first and second writing means in the recording apparatus of figure 1. A processing unit 502 receives the composite signal supplied to its input and processes the composite signal to obtain a sequence of q byte blocks. The processing unit can comprise a cross-interleaved Reed-Solomon encoder. The value of q is 32 for the standard CD format. A

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subcode encoder 504 receives the remaining portion supplied to its input and generates an r byte subcode in response to said remaining portion. The subcode in the standard CD format is essentially an auxiliary data stream. At least one bit of said r byte subcode such as the U-subcode is obtained in response to the remaining portion.

An-A unit 506 receives the sequence of q byte blocks and said r byte subcode and inserts the r byte subcode between adjacent m -bit channel word to obtain a signal to be written on the record carrier 32. Preferably prior to writing said signal on the record carrier, the signal is channel encoded by for example an EFM encoder. The first writing unit 28 in the apparatus of figure 1 comprises the units with reference number 502 and 506. The second writing unit 34 in the apparatus of figure 1 comprises the units with reference number 502-504 and 506.

Replace the paragraph on page 9, between lines 12-26 of the specification with the following:

Figure 6 shows a second embodiment of the first and second writing-reading means in the reproducing apparatus of figure 2. A unit 602 reads a reproduction signal from the record carrier 32.

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The reproduction signal comprises a sequence of q byte blocks with r byte subcodes between each time adjacent q byte blocks. The unit 602 split said reproduction signal into a sequence of q byte blocks and said r byte subcodes. The splitting is based upon the physical position of q byte blocks and the subcodes in the reproduced signal. The sequence of q byte blocks is supplied to a processing unit 604 arranged for processing the sequence of q byte blocks to obtain the composite signal. The processing unit may perform the operations Reed-Solomon decoding and de-cross-interleaving. The composite signal, which is in the form of a standard digital stereo signal, is supplied to output terminal 44. The r byte subcodes are supplied to a processing unit 606. The processing unit 606 is arranged for processing the r byte subcodes to obtain the remaining portion from at least one bit of the r byte subcodes. The remaining portion is supplied to output terminal 56. The first reading unit 40 in the apparatus of figure 2 comprises the units with reference number 602 and 604. The second reading unit 54 in the apparatus of figure 2 comprises the units with reference number 602 and 606.